

## Development of rotating graphite carbon disk stripper

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The rotating disk stripper[1] has been one of the essential elements in RIKEN RIBF for providing a stable high-intensity uranium (U) beam. This rotating stripper was developed on the assumption that a large carbon disk (C-disk) was applied as the stripping material to reduce a heat load of the passing beam by increasing the beam-irradiated area. However, no C-disk was applicable to the stripper at that time, because of its poor surface flatness and unexpected low density. Since 2012, The availability and intensity of the provided U beam have greatly enhanced, by adopting beryllium (Be) as the rotating disk material[2]. Nevertheless, since the U beam intensity incident on the stripper has increased because of the upgraded upstream instruments, the thermal stress by the beam load on the stripper deformed the Be-disk even in a short time operation, which caused fluctuation of the provided U beam intensity. Therefore, we reconsidered the possibility for using C-disk again, and tested a high-density highly oriented graphite (HDHOG) sheet[3] as a stripper disk. It was found that the HDHOG sheet can be applied to the stripper with better stripping efficiency and higher transmission value than Be-disk. Also, the lifetime of the HDHOG disk seems to be much longer than Be. The problem in the final stripping section has been solved and the recent results will be represented.

### References

[1] H. Ryuto et al.: Nucl. Instr. and Meth. A 569 (2008) 697.

[2] H. Hasebe et al.: J Radioanal Nucl Chem (2015) 305:825–829

[3] A. Tatami et al.: Presentation will be held in this conference entitled “Preparation of multi-layer graphene sheets and their applications for particle accelerators”.

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